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BREAK
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Breaking Even

(Excerpt from Indiana Small Business Guide)

A first step to making money

Before you start your business, before you can begin a cash flow projection and before seeking money from an investor or a lender, you need to know your company's break-even point. A break-even point is the point at which total income equals total costs. When you exceed break-even, you begin to make a profit.

Doing a break-even analysis helps you to identify your profit margin and your total costs. Don't let the process of computing a break-even point scare you. It isn't much more than simple arithmetic. Once you have determined the costs of operating your business, it is just a matter of putting those figures into a simple formula.

$$\text{Break-even} = \frac{\text{Fixed Costs}}{\text{Contribution Percentage}}$$

Calculating a Break-Even Point

The first determination to make is: your fixed and variable costs.

• Fixed Costs: These are the costs that do not vary with sales volume. Fixed costs are paid even if there are no sales. Sometime the term fixed costs is referred to as overhead. Rent, administrative salaries, basic utilities and insurance are some examples of fixed costs. A small allowance (about 10% of the fixed costs) is used to factor in those miscellaneous expenses you can't predict.

• Variable Costs: These costs vary with the sales volume. The cost of inventory, manufacturing and shipping are examples.

Example:

Suppose you were going to open a mobile hot dog stand downtown. You find out that your license to do business costs $20 per month. You can rent a mobile cart with a cooler and a hot dog cooker for $20 per day. Your friend will work at the stand for $5 per hour so you can keep your regular job. Hot dogs cost 25 cents each, buns 10 cents and condiments average 10 cents per hot dog. Cans of pop cost 35 cents each.

What is the break-even point for your hot dog stand per day? How about per month?

Your research has shown that people buy hot dogs downtown for lunch between the hours of 11:00 a.m. and 1:00 pm. But there is no market for hot dogs on weekends or on rainy days. It takes about 30 minutes to set up or to take down the stand. With the average month having 22 work days and figuring on losing 2 days per month due to rain, you estimate 20 potential days of business. The hot dog trade association research indicates that the average purchase is 1 hot dog and 1 can of pop per customer.

What are your fixed costs per day?

• Since the business license costs $20 per month, by applying the estimated 20 work days per month, then cost per day is $1.

• We know that the mobile cart costs $20 per day. This is $400 per month ($20 x 20 days).

• What about your employee (for this example we will ignore payroll taxes and other costs)? He will need to work 3 hours per day (one hour set-up & take down + 2 hours of selling) at $5 per hour or $15 per day. That's another $300 per month.

At this point, your fixed cost of operating a downtown hot dog stand is $36 per day ($1 + $20 + $15) or $720 per month ($20 days x $36). But, there may be other costs we haven't identified so we will allow an additional 10% to cover miscellaneous costs (.10 x $36 = $4 rounded). Estimated fixed cost would be $36 + $4. So the final figures are about $40 per day or $800 per month (20 days x $40).

What are your variable costs?

• A hot dog is 25 cents plus a bun at 10 cents and condiments at 10 cents for a total of 45 cents. Based upon your experience in the food industry, you decide to allow another 5 cents to account for any spillage or spoilage. Therefore the variable cost per hot dog is 50 cents.

• The variable cost of the pop is given at 35 cents per can.

• Since an average sale is 1 hot dog and 1 pop, the variable cost of each sale is estimated at 85 cents ($.50 + $.35).

The next thing we need to know is the sales price. Your research of other vendors in the downtown area has shown the typical price of a hot dog to be $1 and a can of pop is $1. Your price needs to be competitive so you plan to set your prices the same as your competitors. But you have decided to offer a lunch special to attract customers to your new business by pricing a combination hot dog and a pop at $1.70 plus tax.

Now we can figure a break-even.

First, let's determine what percentage of our sales price our variable cost will be (Variable Cost Percentage - VCP):

Our variable cost equals 50% of our planned sales price.

$$\frac{\text{Variable Cost}}{\text{Sales Price } \$1.70} = \frac{\$.85}{} = .50$$

This is known as the Contribution Ratio or Contribution Percentage because it tells us what percentage of the sales price can be "contributed" to fixed costs (what percentage remains after we pay our Variable Costs).

Breaking Even (continued)

How much product do we have to sell to break even - Per Day? Per Month?

Divide the fixed cost by the variable cost percentage

$$\frac{FC}{VCP\ .50} = \frac{\$40}{\$80}$$

Per day: Fixed cost is $40 divided by the variable cost percentage of .5 = $80

Hence, sales for the day must equal $80.

Doing the math ($80/$1.70 = 47) tells us that we will break even selling 47 specials.

Per month: similar calculations ($800 divided by .5) gives us a break even of $1600 per month or 941 of our specials must be sold to break even.

As you can see, the calculations are easy once you have determined your costs. You can calculate break-even for the year by multiplying by number of months you plan to operate the downtown stand by the monthly break-even amount.

To summarize:

1. ***Determine your fixed costs***
2. ***Determine the variable costs***
3. ***Compute the contribution rate***
4. ***Divide the fixed costs by the contribution rate***

Now what do you do with the information from this exercise?

First, use the calculation to determine if your business is feasible. Can you sell substantially more than 47 hot dog/soda pop specials per day? If the answer is no, then having the hot dog stand may not be such a great idea because you will lose money.

Second, look at your costs. Are there any ways to reduce the costs involved? Would it be cheaper to purchase a cart rather than rent it? Will the cart vendor give you a better price if you pay for an entire month? Can you buy your inventory (hot dogs, buns, pop and condiments) cheaper anywhere else? Is it cheaper to buy in bulk? Will your friend, or someone else, work for less money?

Third, look at your price. Is your lunch special too cheap? Can you increase the price without affecting sales? Are there other items you can sell that will add to your sales?

Once you have your costs and price issues settled, you use the information with your sales forecast (how many sales will you make) to determine your cash flow needs. Perhaps you will need more start up capital in order to purchase the cart or to purchase inventory in bulk. It may take you a few weeks to get people to buy from your business. Some of your hot dogs may spoil and you still have your fixed costs. How much additional money will you need to cover your expenses and losses?

Use the information to calculate your cash shortage. For this we use Gross Margin.

Gross margin:

For example: if you expect to average only 40 specials per day the first week, how much additional money will you need?

Let's see: 40 specials @ $1.70 = $68. Our variable costs are 50% or $34 so gross margin is $34 ($68 - $34 = $34). Fixed costs are still $40. This leaves a cash shortage of $6 per day or $30 per week.

So you now must plan to allow for at least an additional $30 in cash needs that first week.

Of course, our hot dog stand is a very simple example but the basic process for estimating break-even holds true for any type of business. Remember, we are examining your break-even point. This just covers costs. You will need to consider profit goals.

If you are working with a CPA or an accounting professional, he or she will assist you with a more complex analysis. You can also obtain help from SCORE (www.scoreindiana.org) or an Indiana Small Business Development Center (www.isbdc.org) or the Women's Business Center (www.womensenterprise.org).

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